

Docket No.: 005918 USA/FPS/MMCS/APC



PATENT/OFFICIAL

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of

SHANMUGASUNDRAM et al.

Serial No. 09/943,955

Filed: August 31, 2001

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Group Art Unit: 2122

Examiner:

**RECEIVED**

**JAN 02 2003**

**Technology Center 2100**

For: **FEEDBACK CONTROL OF A CHEMICAL MECHANICAL POLISHING DEVICE  
PROVIDING MANIPULATION OF REMOVAL RATE PROFILES**

**SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT**

Honorable Commissioner for Patents  
Washington, D.C. 20231

Sir:

In accordance with the provisions of 37 C.F.R. 1.56, 1.97 and 1.98, the attention of the Patent and Trademark Office is hereby directed to the documents listed on the attached form PTO-1449. It is respectfully requested that the documents be expressly considered during the prosecution of this application, and that the documents be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

This Information Disclosure Statement is being filed within three months of the U.S. filing date OR before the mailing date of a first Office Action on the merits. No certification or fee is required.

This submission does not constitute a representation that a search has been made or that no better art exists and does not constitute an admission or representation that any of the listed documents is material or constitutes prior art. If it should be determined that any of the listed documents does not constitute prior art under the United States law, Applicants reserve the right

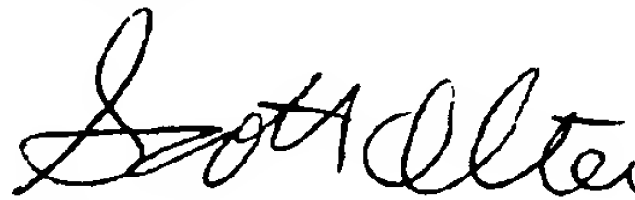
Serial No. 09/943,955

to present to the Office the relevant facts and law regarding the appropriate status of such document.

No certification or fee is believed to be required. However, the Commissioner is hereby authorized to charge any additional fees should any be required for this submission, or credit any overpayment to deposit account no. 08-0219.

Respectfully submitted,

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Date: 12/31/02

<b>INFORMATION DISCLOSURE CITATION IN AN APPLICATION</b>  (PTO-1449)			ATTY. DOCKET NO. 005918 USA/FPS/MMCS/APC		SERIAL NO. 09/943,955  <div style="text-align: center; font-size: 1.5em; font-weight: bold;">RECEIVED</div> <div style="text-align: center;">JAN 02 2003</div>	
			APPLICANT SHANMUGASUNDRAM Technology Center 2100			
			FILING DATE August 31, 2001		GROUP 2122	

U.S. PATENT DOCUMENTS						
EXAMINER'S INITIALS	PUBLICATION / PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
	5,270,222	12/14/93	Moslehi			12/31/90
	5,375,064	12/20/94	Bollinger			12/02/93
	5,599,423	02/04/97	Parker et al.			06/30/95
	5,844,554	12/01/98	Geller et al.			09/17/96

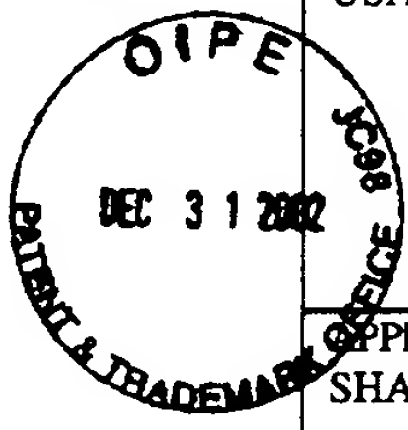
  

FOREIGN PATENT DOCUMENTS							
EXAMINER'S INITIALS	PUBLICATION / PATENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
						Yes	No
	WO 95/34866	12/21/95	WO			X	
	WO 98/45090	10/15/98	WO			X	
	EP 0 881 040 A2	12/02/98	Europe			X	
	WO 99/25520	05/27/99	WO			X	
	WO 00/54325	09/14/00	WO			X	
	EP 1 066 925 A2	01/10/01	Europe			X	
	EP 1 092 505 A2	04/18/01	Europe			X	

OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)	
	Hu, Albert, Kevin Nguyen, Steve Wong, Xiuhua Zhang, Emanuel Sachs, and Peter Renteln. 1993. "Concurrent Deployment of Run by Run Controller Using SCC Framework." IEEE/SEMI International Semiconductor Manufacturing Science Symposium. pp. 126-132.
	Hu, Albert, He Du, Steve Wong, Peter Renteln, and Emanuel Sachs. 1994. "Application of Run by Run Controller to the Chemical-Mechanical Planarization Process." IEEE/CPMT International Electronics Manufacturing Technology Symposium. pp. 371-378.
	Smith, Taber, Duane Boning, James Moyne, Arnon Hurwitz, and John Curry. June 1996. "Compensating for CMP Pad Wear Using Run by Run Feedback Control." Proceedings of the Thirteenth International VLSI Multilevel Interconnection Conference. pp. 437-439.
	Suzuki, Junichi and Yoshikazu Yamamoto. 1998. "Toward the Interoperable Software Design Models: Quartet of UML, XML, DOM and CORBA." Proceedings IEEE International Software Engineering Standards Symposium. pp. 1-10.
	Klein, Bruce. June 1999. "Application Development: XML Makes Object Models More Useful." Informationweek. pp. 1A-6A.
EXAMINER	DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

<b>INFORMATION DISCLOSURE CITATION IN AN APPLICATION</b>  (PTO-1449)			ATTY. DOCKET NO. 005918 USA/FPS/MMCS/APC		SERIAL NO. 09/943,955  <div style="text-align: center; font-size: 1.2em; font-weight: bold;">RECEIVED</div> <div style="text-align: center;">JAN 02 2003</div> <div style="text-align: center;">Technology Center 2100</div>	
						
			APPLICANT SHANMUGASUNDRAM et al.			
			FILING DATE August 31, 2001		GROUP 2122	
<b>U.S. PATENT DOCUMENTS</b>						
EXAMINER'S INITIALS	PUBLICATION / PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
	5,889,991	03/30/99	Consolatti et al.			12/06/96
	6,183,345 B1	02/06/01	Kamono et al.			03/20/98
	6,253,366 B1	06/26/01	Mutschler, III			03/31/99
	6,298,470 B1	10/02/01	Breiner et al.			04/15/99
<b>FOREIGN PATENT DOCUMENTS</b>						
EXAMINER'S INITIALS	PUBLICATION / PATENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	Translation Yes      No
	WO 01/52055 A3	07/19/01	WO			X
	WO 01/57823 A2	08/09/01	WO			X
	EP 1 182 526 A2	02/27/02	Europe			X
	WO 02/17150 A1	02/28/02	WO			X
	WO 02/33737 A2	04/25/02	WO			X
<b>OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)</b>						
	Chemali, Chadi El, James Moyne, Kareemullah Khan, Rock Nadeau, Paul Smith, John Colt, Jonathan Chapple-Sokol, and Tarun Parikh. July/August 2000. "Multizone Uniformity Control of a Chemical Mechanical Polishing Process Utilizing a Pre- and Postmeasurement Strategy." J. Vac. Sci. Technol. A, Vol. 18(4). pp. 1287-1296. American Vacuum Society.					
	Jensen, Alan, Peter Renteln, Stephen Jew, Chris Raeder, and Patrick Cheung. June 2001. "Empirical-Based Modeling for Control of CMP Removal Uniformity." Solid State Technology, Vol. 44, No. 6, pp. 101-102, 104, 106. Cowan Publ. Corp.: Washington, D.C.					
	Sarfaty, Moshe, Arulkumar Shanmugasundram, Alexander Schwarm, Joseph Paik, Jimin Zhang, Rong Pan, Martin J. Seamons, Howard Li, Raymond Hung, and Suketu Parikh. April/May 2002. "Advance Process Control Solutions for Semiconductor Manufacturing." IEEE/SEMI Advanced Semiconductor Manufacturing Conference. pp. 101-106.					
	October 4, 2002. International Search Report from PCT/US01/22833.					
	October 23, 2002. International Search Report from PCT/US01/27406.					
	November 7, 2002. International Search Report from PCT/US02/19061.					
	November 11, 2002. International Search Report from PCT/US02/19117.					
	November 12, 2002. International Search Report from PCT/US02/19063.					
EXAMINER				DATE CONSIDERED		

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